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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/822,537	03/30/2001	Abdeslam Bouti	H-581US-0	7661

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HUSKY INJECTION MOLDING SYSTEMS, INC  
288 NORTH ROAD  
MILTON, VT 05468

EXAMINER

LUK, EMMANUEL S

ART UNIT	PAPER NUMBER
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1722

DATE MAILED: 10/02/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**Application No.  
09/822,537Applicant(s)  
BOUTI, ABDESLAM

Examiner

Emmanuel S. Luk

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

**A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.**

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 March 2001.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-45 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 35-41 is/are allowed.
- 6) ☒ Claim(s) 1-34 and 42-45 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4,5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 7 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claim states that the helical channel is formed on the outside surface of the valve member. Since the helical channel is formed on the outside surface of the mixer housing and the valve member is slidably inserted into the mixer housing, it is unclear where the helical channel is being formed. Thus, the helical channel shall be read as being formed on the mixer housing that is on the outside surface of the valve stem.

3. Claim 18 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 18 recites the limitation "said valve stem" in line 2. There is insufficient antecedent basis for this limitation in the claim. Claim 18 is dependent on claim 15, however there is no reference for establishing antecedent basis for the claim limitation. Claim 16, also dependent on claim 15, establishes antecedent basis of the valve stem. Depending whether claim 18 is dependent on claim 15 or 16, dramatically changes the limitation of the structure. Examiner will act upon the claim as if it is dependent on claim 16.

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***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claims 1-13, 15-17, 19-29, 31-34 and 42-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Swenson et al (5,916,605) in view of Schmidt (5,192,556).

Swenson teaches the claimed injection molding system having a mixer housing comprising of an annular flow insert (21) that has a valve stem (17) that is slidably inserted in the mixer housing, the valve stem operatively connected to a piston (53) at a top distal end (41) and terminated adjacent to a nozzle outlet, or gate (9) with the bottom end (47) of the valve pin. A helical channel, formed by the grooves (75, 79, 80, 81) is formed on the outside surface of the mixer housing, the flowing melt from a nozzle (11), the flow exit of the mixer housing (Fig. 2) being approximately perpendicular to the flow inlet, or opening (77), helical heaters (18) keep the melt material from cooling in the channel. The helical channel reducing cross-sectional area

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as the melt channel flows to the exit (Col. 4, lines 63-66), the outer surface of the mixer is tapered (Fig. 2), and the bore, or wall of inner insert (29), is tapered while the gap between the helical channel and the bore decreases in the direction of the exit (Col. 4, lines 65-68). A locating pin (24) maintains the alignment of the helical channel to the melt channel while the piston housing is affixed to the mixer housing (Fig. 2).

In regards to claim 45, the locating pin (24) is the locator that maintains alignment between the mixer and the nozzle.

In regards to claim 7, the helical channel is formed on the outside surface of the mixer housing that surrounds the valve stem, thus the helical channel is formed on the outside surface of the valve stem.

Swenson fails to teach a hot runner manifold.

Schmidt teaches an injection molding machine where the melt (23) flows from a hot runner manifold (12), the hot runner (22) through the channel past a bushing (40) having a conical shape (52) and valve stem (30) to the nozzle (25).

It would have been obvious to one of ordinary skill in the art to modify Swenson with a hot runner manifold as taught by Schmidt because it allows for distribution of the melt material to the nozzle structure.

7. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Swenson et al (5,916,605) in view of Schmidt (5,192,556) as applied to claims 1-13, 15-17, 19-29, 31-34 and 42-45 above, and further in view of Gessner (5,518,393).

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Swenson fails to teach a spring to urge the nozzle assembly against the manifold.

Gessner teaches spring means (118) that urges the nozzle assembly (112) towards the manifold (110), thereby ensuring a sealing fit between the elements to allow melt flow from the manifold to the nozzle assembly.

It would have been obvious to one of ordinary skill in the art to modify Swenson with spring means as taught by Gessner because it ensures a sealing fit between the elements to allow melt flow from the manifold to the nozzle assembly.

8. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Swenson et al (5,916,605) in view of Schmidt (5,192,556) as applied to claims 1-13, 15-17, 19-29, 31-34 and 42-45 above, and further in view of Rees et al (4,173,448).

Swenson fails to teach a cover and fasteners to affix the bushing to the manifold.

Rees et al teaches an injection molding apparatus having a bushing, or boss (19), located in the bore of the manifold (22), the bushing having plate (10), that acts as a cover and a fastener, or pin (48), to maintain a fixed position between the plate and cylinder (20).

It would have been obvious to one of ordinary skill in the art to modify Swenson with a cover and fasteners as taught by Rees et al because it maintains the position of the bushing to the manifold.

**Allowable Subject Matter**

9. Claim 18 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

10. Claims 35-42 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

For claim 18, the prior art of record fails to teach a method having a mixer bushing in the manifold with a helical channel of decreasing cross-sectional area. A valve stem with helical channel slidably inserted into the mixer housing and operatively positioned to start and stop the flow of said medium. The closest prior art, Swenson and Schmidt, fails to teach a helical channel formed on the inside surface of the mixer bushing with the pin located within the channel.

For claims 35-42, the prior art of record fails to teach an injection molding system having a mixer bushing in the manifold with a helical channel formed on the inside surface of the mixer bushing, a pin inserted co-axially mixer housing. The closest prior art, Swenson and Schmidt, fails to teach a helical channel formed on the inside surface of the mixer bushing with the pin located within the channel.

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**Conclusion**

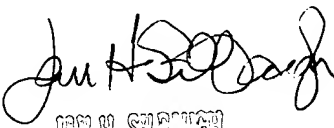
11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Gellert, McGrevy, Takeda and Bouti .

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Emmanuel S. Luk whose telephone number is (703) 305-1558. The examiner can normally be reached on Monday through Friday, 8 AM to 4 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jan Silbaugh, can be reached on (703) 308-3829. The Righfax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0651.

E.L.  
September 30, 2002

  
JAN H. SILBAUGH  
SUPERVISOR  
ART UNIT 1722  
09/30/02